

What is Claimed:

1. A therapeutic system for destroying a target cell within a host having a vascular compartment, the system comprising:

5 (a) a compound comprising an antibody or fragment or derivative thereof and an enzyme which will convert a selected substantially non-cytotoxic substance into a cytotoxic substance; and

(b) said substantially non-cytotoxic substance which is capable of entering the target cell

10 wherein at least the said enzyme of compound (a) capable of said conversion is, following administration to the host, internalised into said target cell, wherein said enzyme which converts said substantially non-cytotoxic substance into a cytotoxic substance requires a nicotinamide co-factor which is present in sufficient concentration within the target cell for the said enzyme to effect conversion
15 of said substantially non-cytotoxic substance into a cytotoxic substance and which nicotinamide co-factor is not present in sufficient concentration within the blood of the vascular compartment for the said enzyme to effect said conversion, and wherein said nicotinamide co-factor does not form part of said system.

20 2. A system according to claim 1 wherein the antibody is the monoclonal antibody 19-9, anti- μ antibody DA4-4, or antibody BR96.

3. A system according claim 1 wherein the enzyme is a reductase, oxidase, dehydrogenase or diaphorase.

25 4. A system according to claim 3 wherein the enzyme is a nitroreductase and the nicotinamide co-factor is NADH or NADPH.

5. A system according to claim 4 wherein the substantially non-
30 cytotoxic substance is any one of CB1954 and actinomycin D pro-drug.

6. A therapeutic system for destroying a target cell within a host having a vascular compartment, the system comprising:

(a) a compound comprising (i) an antibody selected from the group consisting of monoclonal antibody 19-9, anti- μ antibody DA4-4, and antibody BR96, or a fragment or derivative of said antibody, and (ii) a nitroreductase which will convert a selected substantially non-cytotoxic substance into a cytotoxic substance; and

(b) said substantially non-cytotoxic substance which is capable of entering said target cell, said substantially non-cytotoxic substance being selected from the group consisting of CB1954 and actinomycin D pro-drug;

wherein at least the nitroreductase of compound (a) capable of said conversion is, following administration to the host, internalised into said target cell, wherein said nitroreductase which converts said substantially non-cytotoxic substance into a cytotoxic substance requires NADH or NADPH which is present in sufficient concentration within the target cell for the nitroreductase to effect conversion of said substantially non-cytotoxic substance into a cytotoxic substance and which NADH or NADPH is not present in sufficient concentration within the blood of the vascular compartment for the nitroreductase to effect said conversion, and wherein said NADH or NADPH does not form part of said system.